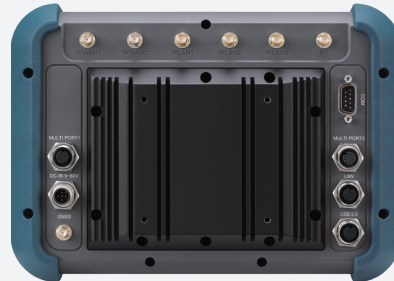# VMC 2020

TAIWAN EXCELLENCE 2022

Main Features

- 8" TFT LCD monitor with projected capacitive touch screen
- IPS LCD with wide viewing angle and resolution 1280 x 720
- Touch panel cover thickness 3mm for IK08 protection
- Sunlight readable capability: 1,000nits LCD brightness
- CVBS input for analog camera x 4 (optional)

- Isolated CANBus 2.0 x 1
- Back-up battery for approx.15 min of operation (optional)
- Wide range DC input from 9V~60V DC in
- Complete IP65 waterproof
- Touchscreen is operable with various gloves (even with water spillage)

Product Overview

VMC 2020, 8-inch all in one robust vehicle mount computer, is designed for the warehouses, port, logistic and material handling markets. It implements the latest Intel Atom® E3950 processor on both of Windows and Linux platforms, and offers complete IP65 and IK08. VMC 2020 is able to support analog camera x 4 (optional) for security purpose and takes less than 1 second to see video content. Optional back-up battery can help to back up data when car power battery stops supplying. LCD panel 1,000nits guarantees to reach sunlight-readable. Wide-range power input (9~60VDC) can let VMC 2020 to be capable of setting up in various facilities, forklifts and vehicles. The design of mini-PCIe slots x 2 and M.2 slot x 1 is supported for WLAN/mSATA/capture card and WWAN wireless connectivity.

Specifications

LCD Panel
- 8-inch TFT LCD panel with LED backlight
- 1280 x 720 pixels (HD)
- Brightness: 1000 cd/m² (typical)
- Viewing angle: 170° (H)/170°(V)
- Contrast ratio: 1000:1 (typical)

Touch Screen
- Projected capacitive
- Anti-glare coating surface
- Transmission rate: 80 ± 3%

CPU
- Intel Atom® processor quad core E3950, up to 2.0GHz, 12W, 4 core

Memory
- 1 x 204-pin DDR3L SO-DIMM socket support 1866MHz up to 8GB. Default 4GB

Storage
- 1 x eMMC 64GB (BOM optional 128GB)
- 1 x mSATA (occupied mini-PCIe slot)

Expansion
- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 2.0)
- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 2.0/SATA 3.0)
- 1 x M.2 3042/3050/3052 Key B socket (USB2.0, USB 3.0/PCIe 2.0 (BOM optional)) for LTE/5G NR module with 2 x external Nano-SIM slot

GNSS and Onboard Sensor
- 1 x Default u-blox NEO-M8N GNSS for GPS/Glonass/QZSS/Galileo/Beidou
- Optional M8U modules with dead reckoning available
- G Sensor (3-axis, 10-bit resolution)

LAN
- 1-port LAN, 10/100/1000 Mbps Intel® I210-IT GbE

Security
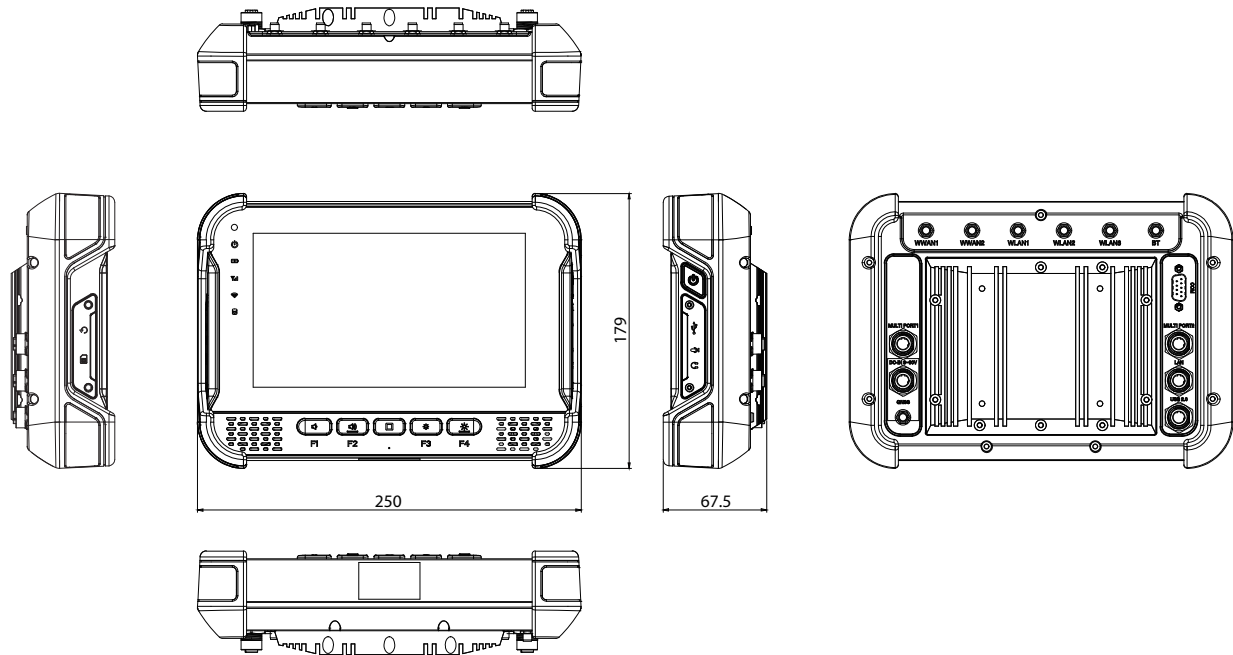- TPM 2.0: Infineon SLB9665TT2.0FW5.62 (BOM optional)

I/O Interface-Front
- Volume control keys (+/-) with LED
- Brightness control keys (+/-) with LED
- F1~F4 programmable function keys with LED
- 1 x Shift key with LED
- 1 x Light sensor
- 5 x LED indicators (power, battery, WWAN, WLAN, storage)
- 2 x Built-in 2W speakers
- 1 x Built-in Mic

I/O Interface-Lateral
- Left Side
  - 1 x System reset button w/ cover
  - 2 x Nano SIM slot w/ cover

Dimension Drawing

- Right Side
  - 1 x Power button
  - 1 x USB 3.0 type A connector w/ cover
  - 1 x Mic-in, 1 x Line-out w/ cover

I/O Interface-Rear
- 1 x Full RS232 (COM, w/ 5VDC, 12VDC)
- 1 x Power connector, M12 A-coded 5-pin
- 1 x 10/100/1000 Mbps LAN, M12 A-coded
- 1 x M12 A-coded 8pin for 2 x USB 2.0
- 1 x M12 (MULTI PORT1, A-coded 8-pin)
  - 2 x GPI
  - 2 x GPO
  - 1 x Isolated CANBus 2.0B
- 1 x M12 (MULTI PORT2, A-coded 12-pin)
  - 1 x RS232 (Tx, Rx)
  - 1 x RS232 (Tx, Rx)/RS422/RS485
  - PWM (speed)+direction+GND, optional 4 x composite video input/CAN-06
- 2 x SMA connector for WWAN
- 3 x SMA connector for WLAN
- 1 x SMA connector for Bluetooth
- 1 x SMA connector for GNSS

Mechanical
- Cooling system: fanless
- Enclosure: plastic
- IK Rating: IK08 (housing and touch screen)
- Mounting: VESA 75
- Ingress protection: complete IP65
- Dimension: 250 x 179 x 67.5 mm
- Weight: 2.6 kg

Power Management
- 9V~60V DC in
- Back-up battery for approx. 15 min of operation (optional)
- Reverse protection/over voltage protection/under voltage protection
- Ignition on/off control & programmable on/off delay timing

- Wake up by LAN, SMS, RTC and ignition

RFID Module (optional, occupied 1 x USB 2.0)
- 13.56-MHz RFID/contactless standard protocols
- Compatibles with all major global secured baseband ISO standards including ISO14443 Type A, MIFARE classic cards, and Smartlabel ISO15693

Environment
- Operating temperatures:
  Ambient with air -30°C to 60°C, ambient with air and without battery
- Storage temperatures: -40°C to 80°C
- Relative humidity: 10% to 90% (non-condensing)
- Vibration (random)
  - 2g@5~500 Hz (in operation)
- Vibration
  - Operating: MIL-STD-810G, 514.6 Procedure 1, Category 4
  - Storage: MIL-STD-810G, 514.6 Procedure 1, Category 24
- Shock
  - Operating: MIL-STD-810G, Method 516.6, Procedure I, trucks and semi-trailers = 40g
  - Crash hazard: MIL-STD-810G, Method 516.6, Procedure V, ground equipment = 75g

Operating System
- Windows 10
- Linux (Kernel 4.x)

Standards/Certifications
- CE/FCC class B/E13/IK08

Ordering Information

- **VMC 2020-PC1 (P/N: 10VC0202000X0)**
  8" rugged vehicle mount computer with Intel Atom® E3950 up to 2.0GHz CPU, projected capacitive touch screen and complete IP65, 4GB DDR3L SO-DIMM, DC input 9~60 VDC